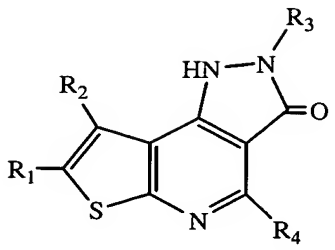
What is claimed is:

1. A compound of formula I



(I)

wherein

R_1 and R_2 are each independently H, C_1-C_{10}alkyl optionally substituted with one or more halogen, hydroxy, C_1-C_4alkoxy, CO_2R_6, $CONR_7R_8$, C_3-C_7cycloalkyl or optionally substituted phenyl groups, or

phenyl optionally substituted with one to three halogen, hydroxy, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_9, $NR_{10}R_{11}$ or CN groups;

R_3 is H, C_1-C_6alkyl optionally substituted with a phenyl, naphthyl or heteroaryl group each group optionally substituted with one to three C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, hydroxy, CHO, NO_2, CN, CO_2R_{12} or $NR_{13}R_{14}$ groups,

phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, $CONR_{15}R_{16}$, $SO_2NR_{15}R_{16}$, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

naphthyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

C_5-C_7cycloheteroalkyl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups, or

heteroaryl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups;

R_4 is phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups,

cycloheteroalkyl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, SO_2NR_{21},R_{22}, CO_2R_{23} or $NR_{24}R_{25}$ groups, or

heteroaryl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups;

R_5 is H, C_1-C_3alkyl or haloalkyl;

R_6, R_9, R_{12}, R_{17}, R_{20}, R_{26} and R_{27} are each independently H or a C_1-C_6alkyl, C_3-C_7 cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted;

n is 0 or an integer of 1 or 2;

R_7, R_8, R_{10}, R_{11}, R_{13}, R_{14}, R_{18}, R_{19}, R_{21}, R_{22}, R_{24} and R_{25} are each independently H or a C_1-C_6alkyl, C_3-C_7cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted or each of R_7 and R_8 or R_{10} and R_{11} or R_{13} and R_{14} or R_{18} and R_{19} or R_{21} and R_{22} or R_{24} and R_{25} may be taken together with the nitrogen atom to which they are attached to form a 5- to 7-membered ring optionally containing another heteroatom selected from O, N or S; and

R_{15} and R_{16} are each independently H, NH_2, $CH_2CH_2OCH_2CH_2OCH_2CH_2NH_2$ or a C_1-C_6alkyl group optionally substituted with one or two CN, OR_5, $NR_{13}R_{14}$, CO_2R_{17} or C_3-C_7cycloalkyl group;

phenyl optionally substituted with one or two halogen, OR_5, CN, $NR_{13}R_{14}$, CO_2R_{17}, COR_{27}, an optionally substituted C_1-C_8alkyl group or an optionally substituted C_2-C_6alkenyl group;

benzyl optionally substituted with one or two halogen, OR_5, COR_{27} or a

C_1-C_6alkyl group optionally substituted with one OR_5 or
pyridinyl optionally substituted with one or two halogen, OR_5, $NR_{13}R_{14}$ or CO_2R_{17} groups or
R_{15} and R_{16} may be taken together with the atom to which they are attached to form an optionally substituted 5- to 7-membered ring optionally containing one double bond, a benzofused ring or an additional heteroatom selected from O, N or S; or
the stereoisomers thereof or the pharmaceutically acceptable salts thereof.

2. The compound according to claim 1 wherein R_3 is an optionally substituted phenyl or heteroaryl group.

3. The compound according to claim 1 wherein R_1 and R_2 are H.

4. The compound according to claim 1 wherein R_4 is a C_5-C_7cycloheteroalkyl, heteroaryl or phenyl group each optionally substituted with one or two halogen, CN, NO_2, CF_3, methoxy, carboxy or SOR_{26} groups.

5. The compound according to claim 2 wherein R_1 and R_2 are H.

6. The compound according to claim 2 wherein R_4 is a thienyl, pyridyl or phenyl group, each optionally substituted with one or two halogen, CN, NO_2, CF_3, methoxy, carboxy or $SOCH_3$ groups.

7. The compound according to claim 3 wherein R_3 is a phenyl group substituted with one or two halogen, $CONR_{15}R_{16}$ or $SO_2NR_{15}R_{16}$ groups.

8. The compound according to claim 7 wherein R_4 is a phenyl group substituted with one NO_2 or CF_3 group.

9. The compound according to claim 1 selected from the group consisting of:
2-(4-chlorophenyl)-4-[3-(trifluoromethyl)phenyl]-1,2-dihydro-3H-pyrazolo-[3,4-d]thieno[2,3-b]pyridin-3-one;
2-(4-fluorophenyl)-4-[3-(trifluoromethyl)phenyl]-1,2-dihydro-3H-pyrazolo-[3,4-d]thieno[2,3-b]pyridin-3-one;

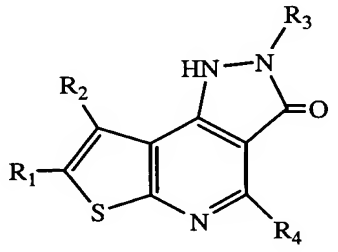
N-(3,4-dihydroxybenzyl)-3-{3-oxo-4-[3-(trifluoromethyl)phenyl]-3,6-dihydropyrazolo[3,4-d]thieno[2,3-b]pyridin-2(1H)-yl}benzamide;

N-[3-(1-hydroxyethyl)phenyl]-4-{3-oxo-4-[3-(trifluoromethyl)phenyl]-3,6-dihydropyrazolo[3,4-d]thieno[2,3-b]pyridin-2(1H)-yl}benzamide;

({[4-(6-methyl-3-oxo-4-[3-(trifluoromethyl)phenyl]-dihydropyrazolo-[3,4-d]thieno[2,3-b]pyridin-2(1H)-yl)phenyl]sulfonyl}amino)acetic acid;

the stereoisomers thereof; or the pharmaceutically acceptable salts thereof.

10. A method for the treatment of an immune disorder related to or affected by the immune regulatory protein B7-1 which comprises providing a patient in need thereof an immunotherapeutically effective amount of a compound of formula I



(I)

wherein

R_1 and R_2 are each independently H, C_1-C_{10}alkyl optionally substituted with one or more halogen, hydroxy, C_1-C_4alkoxy, CO_2R_6, $CONR_7R_8$, C_3-C_7cycloalkyl or optionally substituted phenyl groups, or

phenyl optionally substituted with one to three halogen, hydroxy, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_9, $NR_{10}R_{11}$ or CN groups;

R_3 is H, C_1-C_6alkyl optionally substituted with a phenyl, naphthyl or heteroaryl group each group optionally substituted with one to three C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, hydroxy, CHO, NO_2, CN, CO_2R_{12} or $NR_{13}R_{14}$ groups,

phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl,

benzyloxy, $CONR_{15}R_{16}$, $SO_2NR_{15}R_{16}$, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

naphthyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

C_5-C_7cycloheteroalkyl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups, or

heteroaryl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups;

R_4 is phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups,

cycloheteroalkyl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, SO_2NR_{21},R_{22}, CO_2R_{23} or $NR_{24}R_{25}$ groups, or

heteroaryl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups;

R_5 is H, C_1-C_3alkyl or haloalkyl;

R_6, R_9, R_{12}, R_{17}, R_{20}, R_{26} and R_{27} are each independently H or a C_1-C_6alkyl, C_3-C_7 cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted;

n is 0 or an integer of 1 or 2;

R_7, R_8, R_{10}, R_{11}, R_{13}, R_{14}, R_{18}, R_{19}, R_{21}, R_{22}, R_{24} and R_{25} are each independently H or a C_1-C_6alkyl, C_3-C_7cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted or each of R_7 and R_8 or R_{10} and R_{11} or R_{13} and R_{14} or R_{18} and R_{19} or R_{21} and R_{22} or R_{24} and R_{25} may be taken together with the nitrogen atom to which

they are attached to form a 5- to 7-membered ring optionally containing another heteroatom selected from O, N or S; and

R_{15} and R_{16} are each independently H, NH_2, $CH_2CH_2OCH_2CH_2OCH_2CH_2NH_2$ or a C_1-C_6alkyl group optionally substituted with one or two CN, OR_5, $NR_{13}R_{14}$, CO_2R_{17} or C_3-C_7cycloalkyl group;

phenyl optionally substituted with one or two halogen, OR_5, CN, $NR_{13}R_{14}$, CO_2R_{17}, COR_{27}, an optionally substituted C_1-C_8alkyl group or an optionally substituted C_2-C_6alkenyl group;

benzyl optionally substituted with one or two halogen, OR_5, COR_{27} or a C_1-C_6alkyl group optionally substituted with one OR_5 or

pyridinyl optionally substituted with one or two halogen, OR_5, $NR_{13}R_{14}$ or CO_2R_{17} groups or

R_{15} and R_{16} may be taken together with the atom to which they are attached to form an optionally substituted 5- to 7-membered ring optionally containing one double bond, a benzofused ring or an additional heteroatom selected from O, N or S; or

the stereoisomers thereof or the pharmaceutically acceptable salts thereof.

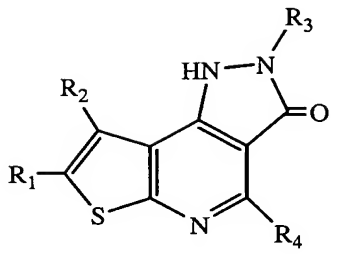
11. The method according to claim 10 wherein said disorder is transplant rejection.

12. The method according to claim 10 wherein said disorder is an autoimmune disease.

13. The method according to claim 10 wherein said disorder is graft vs. host disease.

14. The method according to claim 12 wherein said disease is multiple sclerosis or rheumatoid arthritis.

15. A pharmaceutical composition which comprises a pharmaceutically acceptable carrier and an effective amount of a compound of formula I



(I)

wherein

R_1 and R_2 are each independently H, C_1-C_{10}alkyl optionally substituted with one or more halogen, hydroxy, C_1-C_4alkoxy, CO_2R_6, $CONR_7R_8$, C_3-C_7cycloalkyl or optionally substituted phenyl groups, or

phenyl optionally substituted with one to three halogen, hydroxy, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_9, $NR_{10}R_{11}$ or CN groups;

R_3 is H, C_1-C_6alkyl optionally substituted with a phenyl, naphthyl or heteroaryl group each group optionally substituted with one to three C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, hydroxy, CHO, NO_2, CN, CO_2R_{12} or $NR_{13}R_{14}$ groups,

phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, $CONR_{15}R_{16}$, $SO_2NR_{15}R_{16}$, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

naphthyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

C_5-C_7cycloheteroalkyl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups, or

heteroaryl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups;

R_4 is phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl,

phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups,

cycloheteroalkyl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, SO_2NR_{21},R_{22}, CO_2R_{23} or $NR_{24}R_{25}$ groups, or

heteroaryl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups;

R_5 is H, C_1-C_3alkyl or haloalkyl;

R_6, R_9, R_{12}, R_{17}, R_{20}, R_{26} and R_{27} are each independently H or a C_1-C_6alkyl, C_3-C_7 cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted;

n is 0 or an integer of 1 or 2;

R_7, R_8, R_{10}, R_{11}, R_{13}, R_{14}, R_{18}, R_{19}, R_{21}, R_{22}, R_{24} and R_{25} are each independently H or a C_1-C_6alkyl, C_3-C_7cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted or each of R_7 and R_8 or R_{10} and R_{11} or R_{13} and R_{14} or R_{18} and R_{19} or R_{21} and R_{22} or R_{24} and R_{25} may be taken together with the nitrogen atom to which they are attached to form a 5- to 7-membered ring optionally containing another heteroatom selected from O, N or S; and

R_{15} and R_{16} are each independently H, NH_2, $CH_2CH_2OCH_2CH_2OCH_2CH_2NH_2$ or a C_1-C_6alkyl group optionally substituted with one or two CN, OR_5, $NR_{13}R_{14}$, CO_2R_{17} or C_3-C_7cycloalkyl group;

phenyl optionally substituted with one or two halogen, OR_5, CN, $NR_{13}R_{14}$, CO_2R_{17}, COR_{27}, an optionally substituted C_1-C_8alkyl group or an optionally substituted C_2-C_6alkenyl group;

benzyl optionally substituted with one or two halogen, OR_5, COR_{27} or a C_1-C_6alkyl group optionally substituted with one OR_5 or

pyridinyl optionally substituted with one or two halogen, OR_5, $NR_{13}R_{14}$ or CO_2R_{17} groups or

R_{15} and R_{16} may be taken together with the atom to which they are

attached to form an optionally substituted 5- to 7-membered ring optionally containing one double bond, a benzofused ring or an additional heteroatom selected from O, N or S; or

the stereoisomers thereof or the pharmaceutically acceptable salts thereof.

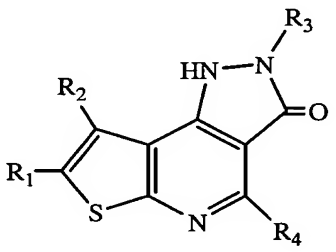
16. The composition according to claim 15 having a formula I compound wherein R_3 is an optionally substituted phenyl, thienyl or pyridyl group.

17. The composition according to claim 16 having a formula I compound wherein R_1 and R_2 are H.

18. The composition according to claim 17 having a formula I compound wherein R_4 is a thienyl, pyridyl or phenyl group each optionally substituted with one or two halogen, CN, NO_2, CF_3, methoxy, carboxy or $SOCH_3$ groups.

19. The composition according to claim 18 having a formula I compound wherein R_3 is a phenyl group substituted with one or two halogen, $CONR_{15}R_{16}$ or $SO_2NR_{15}R_{16}$ groups.

20. A process for the preparation of a compound of formula I



(I)

wherein

R_1 and R_2 are each independently H, C_1-C_{10}alkyl optionally substituted with one or more halogen, hydroxy, C_1-C_4alkoxy, CO_2R_6, $CONR_7R_8$, C_3-C_7cycloalkyl or optionally substituted phenyl groups, or

phenyl optionally substituted with one to three halogen, hydroxy, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_9, $NR_{10}R_{11}$ or CN groups;

R_3 is H, C_1-C_6alkyl optionally substituted with a phenyl, naphthyl or heteroaryl group each group optionally substituted with one to three C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, hydroxy, CHO, NO_2, CN, CO_2R_{12} or $NR_{13}R_{14}$ groups,

phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, $CONR_{15}R_{16}$, $SO_2NR_{15}R_{16}$, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

naphthyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, CO_2R_{17}, $NR_{18}R_{19}$ or $CH_2CO_2R_{20}$ groups,

C_5-C_7cycloheteroalkyl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups, or

heteroaryl optionally substituted with one to three halogen, NO_2, CN, C_1-C_6alkyl, C_1-C_6haloalkyl, C_1-C_4alkoxy, CO_2R_{17} or $NR_{18}R_{19}$ groups;

R_4 is phenyl optionally substituted with one to three halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups,

cycloheteroalkyl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, SO_2NR_{21},R_{22}, CO_2R_{23} or $NR_{24}R_{25}$ groups, or

heteroaryl optionally substituted with one or more halogen, NO_2, CN, hydroxy, C_1-C_6alkyl, C_1-C_6alkylthio, C_1-C_6haloalkyl, C_1-C_6alkoxy, phenyl, phenoxy, benzyl, benzyloxy, SO_nR_{26}, $SO_2NR_{21}R_{22}$, CO_2R_{23} or $NR_{24}R_{25}$ groups;

R_5 is H, C_1-C_3alkyl or haloalkyl;

R_6, R_9, R_{12}, R_{17}, R_{20}, R_{26} and R_{27} are each independently H or a C_1-C_6alkyl, C_3-C_7 cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted;

n is 0 or an integer of 1 or 2;

R_7, R_8, R_{10}, R_{11}, R_{13}, R_{14}, R_{18}, R_{19}, R_{21}, R_{22}, R_{24} and R_{25} are each independently H or a C_1-C_6alkyl, C_3-C_7cycloalkyl, C_1-C_6haloalkyl, phenyl, C_5-C_7cycloheteroalkyl or heteroaryl group each optionally substituted or each of R_7 and R_8 or R_{10} and R_{11} or R_{13} and R_{14} or R_{18} and R_{19} or R_{21} and R_{22} or R_{24} and R_{25} may be taken together with the nitrogen atom to which they are attached to form a 5- to 7-membered ring optionally containing another heteroatom selected from O, N or S; and

R_{15} and R_{16} are each independently H, NH_2, $CH_2CH_2OCH_2CH_2OCH_2CH_2NH_2$ or a C_1-C_6alkyl group optionally substituted with one or two CN, OR_5, $NR_{13}R_{14}$, CO_2R_{17} or C_3-C_7cycloalkyl group;

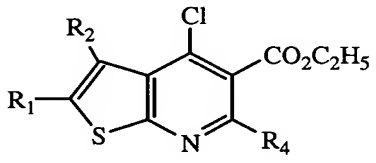
phenyl optionally substituted with one or two halogen, OR_5, CN, $NR_{13}R_{14}$, CO_2R_{17}, COR_{27}, an optionally substituted C_1-C_8alkyl group or an optionally substituted C_2-C_6alkenyl group;

benzyl optionally substituted with one or two halogen, OR_5, COR_{27} or a C_1-C_6alkyl group optionally substituted with one OR_5 or

pyridinyl optionally substituted with one or two halogen, OR_5, $NR_{13}R_{14}$ or CO_2R_{17} groups or

R_{15} and R_{16} may be taken together with the atom to which they are attached to form an optionally substituted 5- to 7-membered ring optionally containing one double bond, a benzofused ring or an additional heteroatom selected from O, N or S; or

which process comprises reacting a compound of formula VI



(VI)

wherein R_1, R_2 and R_4 are described hereinabove with a hydrazine, R_3NHNH_2, to give a 3-hydrazinylthieno-[2,3-b]pyridine intermediate; and cyclizing said intermediate to give the desired compound of formula I.